

How to stop TOXIC STRESS making you ill

Chronic stress from a build-up of everyday pressures can be damaging to health, says a leading expert — but hugging a pet, even playing the drums, could help reverse it

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OBeSITy, diabetes, heart disease, depression and autoimmune disorders such as arthritis are all conditions that can be driven by a hidden cause that doctors very seldom mention: chronic stress.

And all these problems have been rising at alarming rates over the past 50 years.

Chronic stress is something we never evolved to cope with. In primitive times our stresses were short term — either you survived famine, drought or attack by a predator, for instance, or you didn't.

But in modern life social conditions have helped to create stress that is chronic — long term and persistent — and toxic to our bodies. An annual poll commissioned by the American Psychological Association identifies the four major chronic stresses of the modern world as work, money, family responsibilities and health.

The burden of such continual nagging worries causes repeated, sustained toxic stress without reprieve.

Toxic stress can kill us prematurely by accelerating the progression of conditions such as hypertension (high blood pressure), diabetes and heart disease. yet most medics ignore stress or just pay it lip service.

Standards of treatment for diabetes and heart disease, promoted by leading medical organisations, hardly offer a whisper about stress as a risk factor for ill health, or as a target for treatment.

yet we know from decades of good neuroscience that severe or persistent stress raises the risks of these common illnesses, and makes most illnesses harder to treat.

We also know that exposure to adverse experiences in childhood is a strong predictor of physical and mental illness in adulthood.

Like volcanoes in the ocean, most of the troubles that erupt in our stress-response systems lie deep beneath our awareness and go undetected until they take the form of major illnesses.

Many of toxic stress's mechanisms, however, are in plain sight. Worrying a lot about money roughly doubles our chances of sedentary or unhealthy behaviours such as watching more than two hours of TV a day; surfing the internet; napping or sleeping excessively; eating more; drinking alcohol and smoking.

Done enough for long enough, these factors substantially raise our risk of serious illnesses, such as diabetes and heart disease.

Technology (modern and notso-modern) also plays a role.

Consider what the advent of the light bulb in the late 19th century has done to our natural rhythms. Add to the light bulb today's exciting and enraging late-night news broadcasts, bedtime Kindle reading, mobile phones beeping at the bedside with each incoming message, and nightly netflix binges — it's a wonder we get any sleep at all.

Then add all the hours we spend sitting in chairs. The opportunities to mull over our troubles have mushroomed in the past century. evolution did not prepare us for this constant stimulation and rumination.

Both acute stress and chronic stress trigger catabolic states — where our bodies break down the cells in tissues into sugars we can use for emergency energy.

However, modern chronic stresses keep us in the catabolic state for far too long. This means we don't burn up the sugar we've released and instead it gets stored again in our bodies.

On its return, though, it is stored as fat in the wrong places, such as our bellies. This also effectively deprives us of energy that would normally be used for maintaining healthy bones and muscles.

We also get fatter and more ill due to stress-driven cravings.

Like all animals, we've evolved to seek stress relief, fast. no wonder stress drives so many people to drink, smoke a cigarette or gamble. Also, many of us may misread the signals from our digestive system, mistaking the stomach churning triggered by anxiety for hunger, for example.

We then learn that we can calm these distress signals from the stomach by eating.

We only get one stress-response system for our lifetime, and the cumulative demands of daily life take their toll on it. The record of that toll is kept in our genes and in the structures of our organs, as well as in our fickle memories.

And if you and I are in the same car accident, what for you might be no more than the tolerable stress of an inconvenient crunch to the rear passenger door, could for me be the toxic stress of a paralyzing near-death experience that condemns me to a life of disability.

The difference between us may be that prior to that accident I had accumulated a burdensome load of stressors and a stress-response system that was worn nearly to its limits.

One way to tell if we're breaking under toxic stress is to test our autonomic nervous system [which regulates involuntary processes including heart rate, blood pressure and sexual arousal].

This system consists of two modes: the parasympathetic (a state of rest and relaxation) and the sympathetic (a state of stress and activity). If there's too much sympathetic activity for long periods, there's an imbalance.

A high resting heart rate is a simple indicator of excess sympathetic activity — and may reveal the price paid for stoically enduring the tension in a marriage or conflict with a bullying boss.

Indeed a resting heart rate of 90 beats per minute triples the early death rate, compared with a resting heart rate of 60 beats per minute.

Some people stay healthy in spite of long exposures to high levels of stress because they have plenty of resources to bounce back. These may be as varied as religious faith, optimistic personality traits (glass half full), financial wealth, physical vigour or a rich social network.

Other less obvious things can also help to make a stress-response system function at its best. Medical anthropologists have helped us here, by asking a simple question: where do people live the longest and why?

The answers come from rural villages in remote places of the world — such as Hunza in Pakistan, Vilcabamba in Ecuador or Abkhazia in Georgia — which are home to some of the highest numbers of healthy centenarians in the world, free of high blood pressure, heart disease, dementia and arthritis. Studies show that the following are the habits common to all these different far-flung healthy centenarians: move your body daily, and gently; work with a purpose; face stress and let go of it; belong

to communities; care for your family; eat a plant-based diet; and drink a little wine.

In our modern lives, the opportunities often aren't there to do these. However, science shows there are other crucial things we can do to lower toxic stress — or deal with it better.

HUGS, PETS AND EATING IN COMPANY

WE HUMANS are guided by our inborn levels of oxytocin, a hormone produced by the brain and released into the bloodstream. It sharpens our attention to social cues, dampens our fight-or-flight responses, and generally has a calming effect that helps us connect to others.

And oxytocin might be useful as a buffering treatment for people enduring chronic stress. In laboratory studies, repeated doses of oxytocin have been shown to lower blood pressure and levels of cortisol [the stress hormone], and raise endorphin levels.

So consider the ways we can raise oxytocin levels.

This includes consensual physical contact, from handshakes to sex, as well as contact with pets. This may help to explain why dog-owners have better survival rates after heart attacks than non dog-owners.

Studies also show that exercise and eating in good company may also raise oxytocin levels. This is the chemistry of affection that prolongs life.

MEDITATION, YOGA OR EVEN DRUMMING

PRACTISING meditation is a way to reduce your stress response every day. Seasoned meditators generally have lower resting heart rates and respiratory rates than the rest of us, even when not meditating.

They also tend to have less stress when facing challenges and faster stress recovery rates. And they harbour less low-grade inflammation in their bodies.

One mechanism that could explain how most types of meditation improve health is that each reduces the autonomic nervous system's stressy sympathetic activity and increases relaxed parasympathetic activity.

In this way, these practices are steadily retraining the overactive autonomic nervous system towards a healthier balance of sympathetic and parasympathetic activity.

To meditate regularly, for 15 to 30 minutes once or twice a day, you have to believe this: it's safe to do nothing for this time, and nothing bad will happen if you pause your worrying.

However, for some people, meditation doesn't work — it increases their anxiety and makes them squirm. For them, walking, slow dancing, gentle drumming or yoga may provide better ways to achieve the same retraining of the stress-response system, but through actions rather than through thoughts.

PROOF THAT YOU CAN REVERSE THE DAMAGE

PROOF that changing your habits can quell toxic stress and the physical harms it wreaks can be found in the Undo It programme, which was established by stress-treatment pioneer, dr dean Ornish, a clinical professor of medicine at the University of California in the U.s.

His online programme, which has been proven in studies to reverse some heart disease without medication or surgery, is now paid for by the american government's health-insurance system, Medicare. This shows it has passed scientific scrutiny and has proven its cost-effectiveness.

The four key elements of this approach are: eat well, move more, stress less, and love well.

It's not magic. It's about sensible habits: you change how you eat (vegetarian), how you move (gently and often), how you think and feel (worry less), and how you relate to people (close and safe).

The programme also involves learning stress-management techniques such as yoga, meditation and stretching.

studies show how the regimen can widen restricted coronary arteries in people with cardiovascular disease, reduce chest pain, as well as lower blood pressure, inflammation and harmful cholesterol. It can also help maintain healthy blood sugar levels and fight insomnia.

These broad-ranging improvements are the payoff for achieving more consistent regulation of your stressresponse system.

■ LAWSON WULSIN is a professor of psychiatry and family medicine at the University of Cincinnati in the U.S. *Toxic Stress: How Stress is Making Us ill and What We Can Do about it*, by Dr lawson r. Wulsin, is published by Cambridge University Press on april 18, £14.99.